THE CAT'S WHISKER

BULLETIN OF THE CANADIAN VINTAGE WIRELESS ASSOCIATION

VOL. 8 NO. 4. DEC. 1978

A.D. CHALLONER Editor

MYSTERY PHOTOGRAPH!

CVWA EXECUTIVE COMMITTEE

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THE CAT'S WHISKER STAFF

Editor: Dorian Challoner,29 Grenview Blvd. N., Toronto, Ont. M8X 2J9
Co-Editor: Mervin C. Fry, 75 Dunlop St. Richmond Hill, Ont, L4C 2M7
Trading Post and Gold Dust Editor: Sid Prior, 102 Parkhurst Blvd., Toronto, Ont., CANADA M4G 2E6

The Cat's Whisker is published quarterly and distributed to members of the Canadian Vintage Wireless Association. The price of this publication is included in the annual due of $5 payable to the Treasurer on 1 October.

EDITOR'S NOTES:

We hope you find some interesting holiday reading within. Still recovering from the last bulletin- what with missed deadlines on top of postal strikes- let's hope we fair somewhat better this time. As for this issue there's notice of a good meeting coming up in Jan.; a word from our new President and a word about our Past President; with some delight we present our first collector of the month; Sid Prior has cause to reflect; Radio College of Canada celebrated their 50th anniversary on Dec. 5th and We pay tribute with a reprint from Radio Trade Builder of the '40's;Maurice Chaplin redraws a Rogers;and (alas) another reprint about the CGE205 we spoke of last time; of course we have the Trading Post and last but most important the READER QUESTIONNAIRE - please,please take time to fill it out and send it along.

Oh, the Mystery Photograph? Yes, does anyone know who, when or where, or even what? We don't know much but we'll publish the best answers. Finally, by unanimous motion of the Executive Committee we wish you a

Merry Christmas & Happy New Year

P.S. The AK centerfold comes courtesy of Fred Hammond.

CVWA MEETING

A Talk on-

Federal Telephone & Telegraph Co.

Display of Federal Sets,
Bring your own!

Door Prizes!

SATURDAY JANUARY 20 1:30PM

110 RUMSEY RD. EAST YORK

PROGRAM

12:30	Begin cataloguing of auction equipment and registration of bidders
1:30	Meeting begins
2:00	Talk on Federal by Dick Schamberger
2:45	Break
3:00	Auction begins

**** Let's Make This A Federal Affair! ****

DUES

If you haven't already done so, send your $5 annual dues to Treasurer, Jack Knott 69 Rossburn Dr., Etobicoke, Ont. CANADA M9C 2P9.

This is your last free bulletin!

President's Message:

It is a pleasure and a challenge to be your President for the coming year. Our Association is young, vigorous and ready to continue the vast amount of work necessary to fulfill the aims and objectives spelled out in our Constitution.

I recognise the varied interests of our members and hope that each will obtain increased value and pleasure from their membership during the months to come.

In addition to improving the services available to members I would like to increase membership by about 25% during the year.

Every owner of a 'thirties floor model should be encouraged to join our group. They, too, are playing a part in preserving radio history. These new members would be able to obtain information on the Company that manufactured their receiver, production quantities, dates, etc., and receive help in maintaining their radio in good operating condition.

Both younger and older members of the community could become involved with our Association. Their interest would probably be in collecting and I would suggest they follow a reverse path, that is, start with something comparitively modern and then work back to extend a collection which ultimately could be of historical value. For example, suppose our budding collector has a modern AM portable receiver. He could specialise in this type of item. He could seek, with some chance of success, to obtain a Sony TR610, the first Japanese receiver to enter the Canadian market, the Clairtone "matchbox" receiver, the portables with tube-type chassis by Electrohome or RCA modified for transistor operation. This would lead to post-war and pre-war examples of the tube-type "personal" radio, then the "three-way" portable leading eventually to the massive models of the twenties.

A modest tube collection could be based initially just on the tube complement for the AC/DC "kitchen" receiver. The collection could work back from the miniatures, the single-ended octal types, etc.

Finally, feedback - positive and negative - has played an important role in radio and it can be equally important in our Club. Let's have your ideas and suggestions.

•••• M. Chaplin

CVWA LIFE MEMBER

The vote was unanimous at the last CVWA Annual Meeting to honour Past President Bill Choat with the first CVWA Life Membership. Bill's contributions to the club as founding President have been many indeed, but as he would have it he agreed to the new title only if he could still pay dues! We have reprinted a sketch from the Sept.'73 Toronto Amateur:

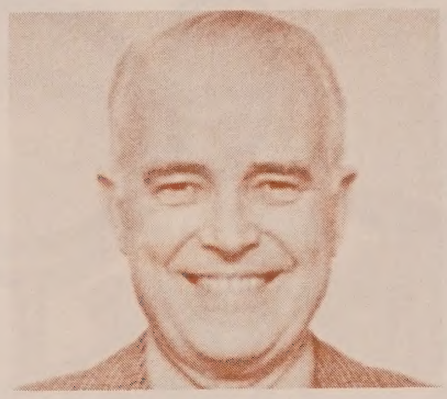


Photo: courtesy Chris Christiansen

Bill Choat was born in Toronto in 1904. While in high school in 1919 he got interested in "wireless" and became a ham. With entirely home brew equipment he was first on the air as "3CO" in January 1920. In 1923 Bill obtained his Second Class Commercial ticket and sailed the Great Lakes on the SS Canadian Sower, a grain boat. He worked for Toronto Radio the following winter.

In 1924 with a First Class Commercial and also his Amateur licence Bill became the first short-wave maritime mobile operator to both send and receive messages in the Canadian North. He built and installed ham apparatus on the Government ship "Arctic", an old wooden sailing ship with an auxiliary steam engine for maneuvering in ice. This allowed him to regularly communicate with Ottawa in the long summer daylight hours which was not possible with the regular commercial apparatus on board. The story of Bill's 7,500 mile trip to within 680 miles of the North Pole and stops at Baffin and Ellesmere Islands, Greenland and other points is a fascinating one which he has told to many amateur radio clubs. The pictures he took, in fair weather and foul, are unusually interesting. He is still an ardent amateur photographer.

After his trip to the north, Bill became a radio receiver salesman for Canadian Westinghouse in November 1924 and spent 46 years in their Electronic Tube Division. He retired in 1970. During the war he was on loan for over three years to Research Enterprises Ltd.

A member of the American Radio Relay League continuously since January 1920, Bill served as Ontario SEC for many years, as Assistant Director (Ontario) 1970 to 1972 and received the ARRL Certificate of Merit. He was Secretary of the Wireless Association of Ontario in the 1920's when the late Keith Russell, 3AL, was President. As Ass't. Sec'y. of OARFInc. from its formation in 1957, Bill was involved in its amagamation with OARA and the formation of the Radio Society of Ontario Inc. in 1963. He became Vice President and then, as President, Bill encouraged RSO to adopt the CNIB Amateur Radio Club as a public service project in February 1967.

Bill himself was one of our earliest Sponsors and became Chairman of our Sponsors Committee in 1968. He was appointed Manager of CNIB A R C in 1970 and Secretary of the Administrative Board. As might be expected, Bill has many other related interests. He was a founding member of the Canadian Section of the Institute of Radio Engineers (now IEEE) in 1926 and is now a Lite member. He is President of the Canadian Vintage Wireless Association. A founding member of the Toronto Society of Model Engineers, Bill was Secretary from 1933 to 1946, has been President more than once and is still active. One of the earliest radio-controlled model boat enthusiasts, Bill has a 7 foot model of the H.M.S. Hood which he built and sailed many years ago. In 1928 Bill was one of the charter members of the Toronto Flying Club and received his private pilot's licence in 1929. His wings were clipped, however, by his marriage to Lorene Ball and the responsibilities of a family. His son John is a High School teacher and has produced two grandchildren for Bill. His daughter Nancy is a Registered Nurse and at present teaching skiing at Whistler Mountain in British Columbia.

During the past 50 years Bill has been at innumerable hamfests and conventions in Ontario and some in Quebec, the Maritimes and the United States. On a recent trip to Great Britain he visited the RSGB. Bill is a capable speaker and has addressed many radio clubs, service clubs and Church groups. He has been an Elder in the Kingsway United Church for 15 years but is neither an A.A. nor a member of the Sons of Temperance. Hi.

Bill much prefers radio traffic instead of mail correspondence and is very active on 80 to 20 meters. He checks in to Ontars and C-J nets almost every day and is frequently on Trans-Canada, Ontario Phone and Ontario-Quebec nets. In case anyone has CNIB A R C traffic for him, any Toronto station can phone 231-0483, his home number. Since retiring from Westinghouse he has spent most of his time, when not required for his United Appeal commitments each fall, in managing the CNIB A R C program. With over 210 licenced Whitecaners and more than 1,100 items of equipment on loan from coast to coast, Bill is an active and busy man.

—VE3AW

*BLIND (Registered with C.N.I.B.)

Photo #1 Bill Russell's Collection

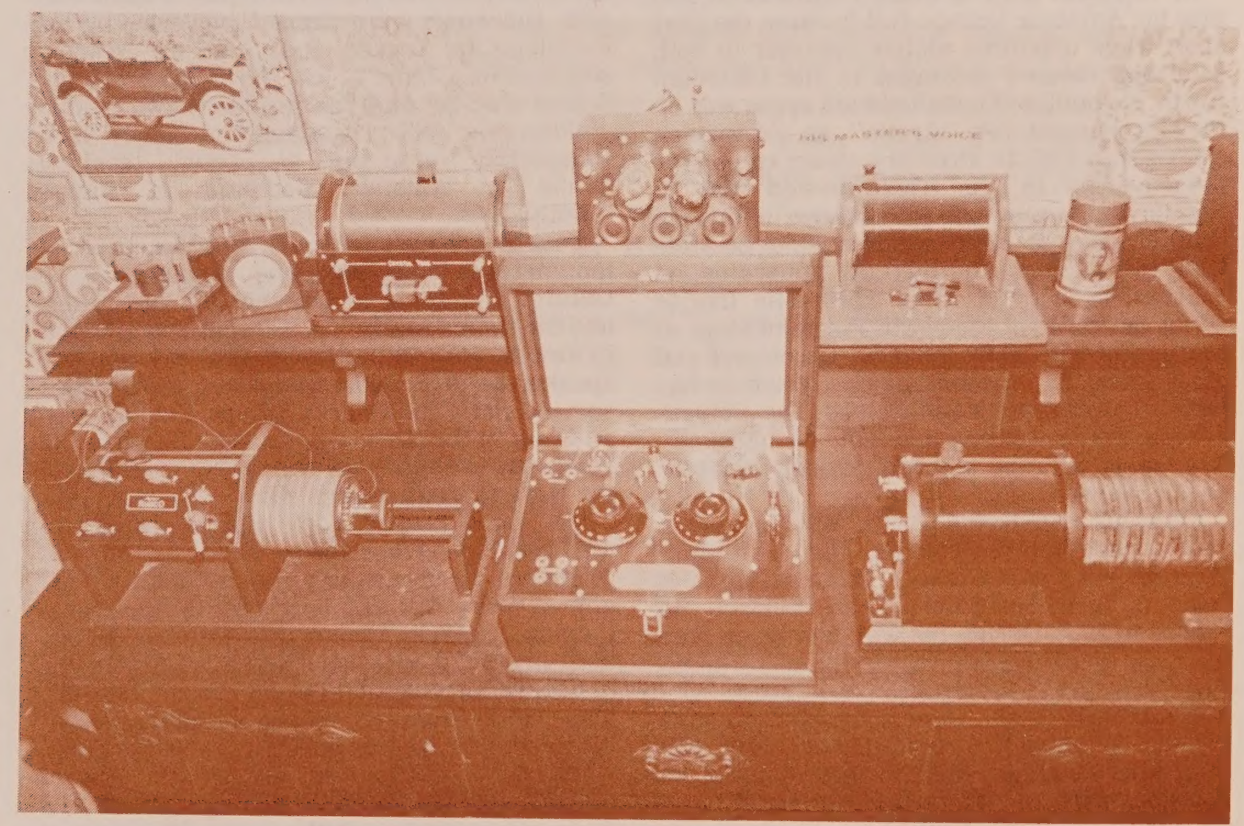


Photo #2

CW's

COLLECTOR OF THE MONTH

In response to several pleas for equipment photos I am pleased to announce that one brave CVWA collector has come forward at last. Not just from Toronto, or Buffalo, but all the way from Bulimba, Queensland Australia! May I introduce to you, Bill Russell (VK4MR). Bill recently sent me a nice letter and some interesting B&W photos which I would like to share with you.

Photo #1 shows a corner of his display with the familiar types of equipment - loop antenna horn speakers, and vintage battery radios - but I can't identify one of North American make. On the desk in the corner (photo #2) is an enviable collection of crystal sets and loose couplers with such names as 'Crystal Tone' and 'RUDCO' (using a magnifier on the original photo).

The most unusual items in Bill's collection are his home made replicas of early Marconi receivers. The two sets shown in photos #3 & #4 exhibit a very high degree of craftmanship and were made with only authentic British Post Office components that would have been available in U.K. at the turn of the century. The set in photo #3 was itself made from a photograph reproduced in a book published in 1923, "Wireless Telegraphy and Broadcasting", by H.W. Dowsett, vol.1, pg.93 Fig. 11. Therin it is presented as 'Marconi's

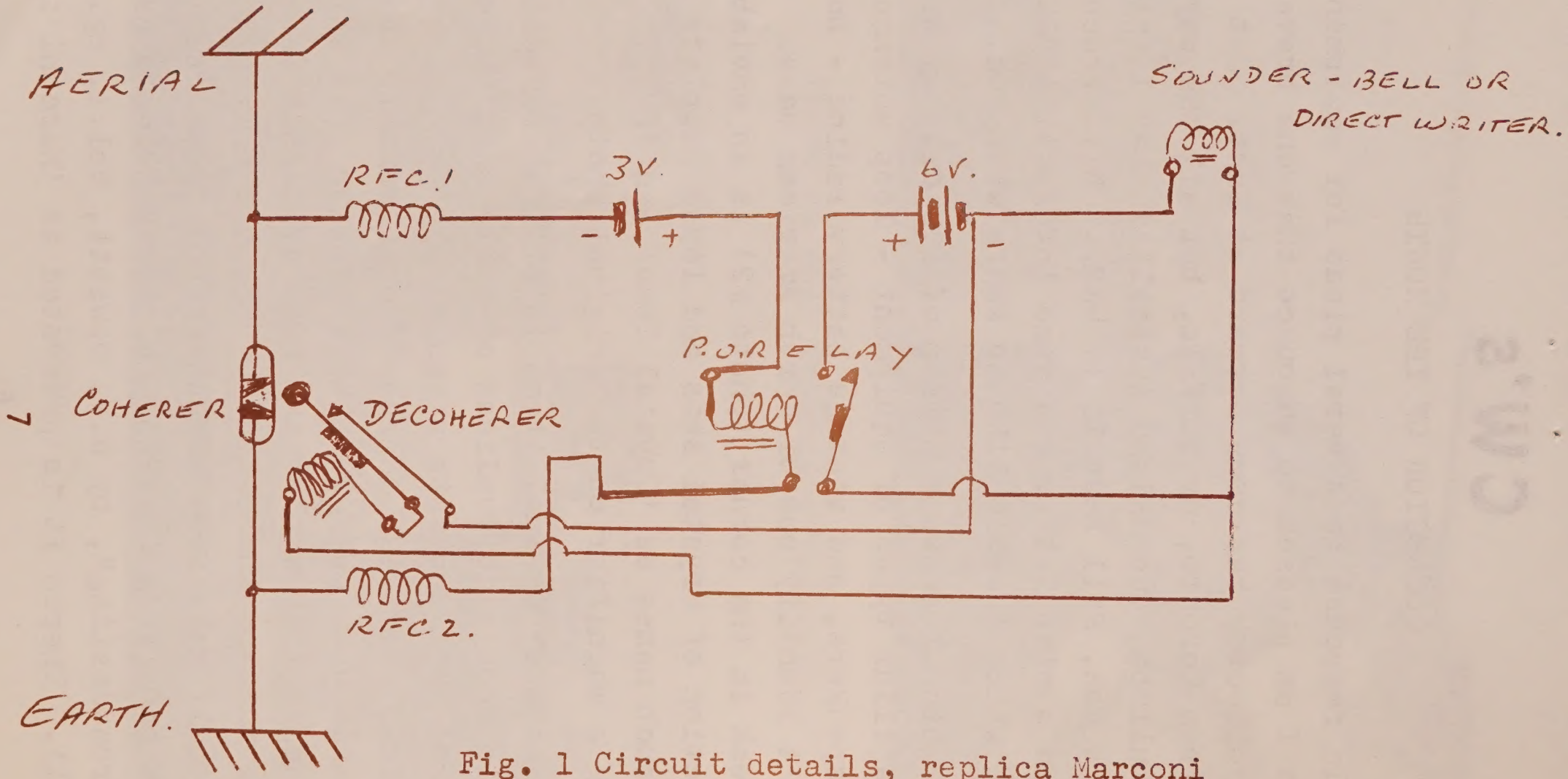


Fig. 1 Circuit details, replica Marconi receivers built by Bill Russell

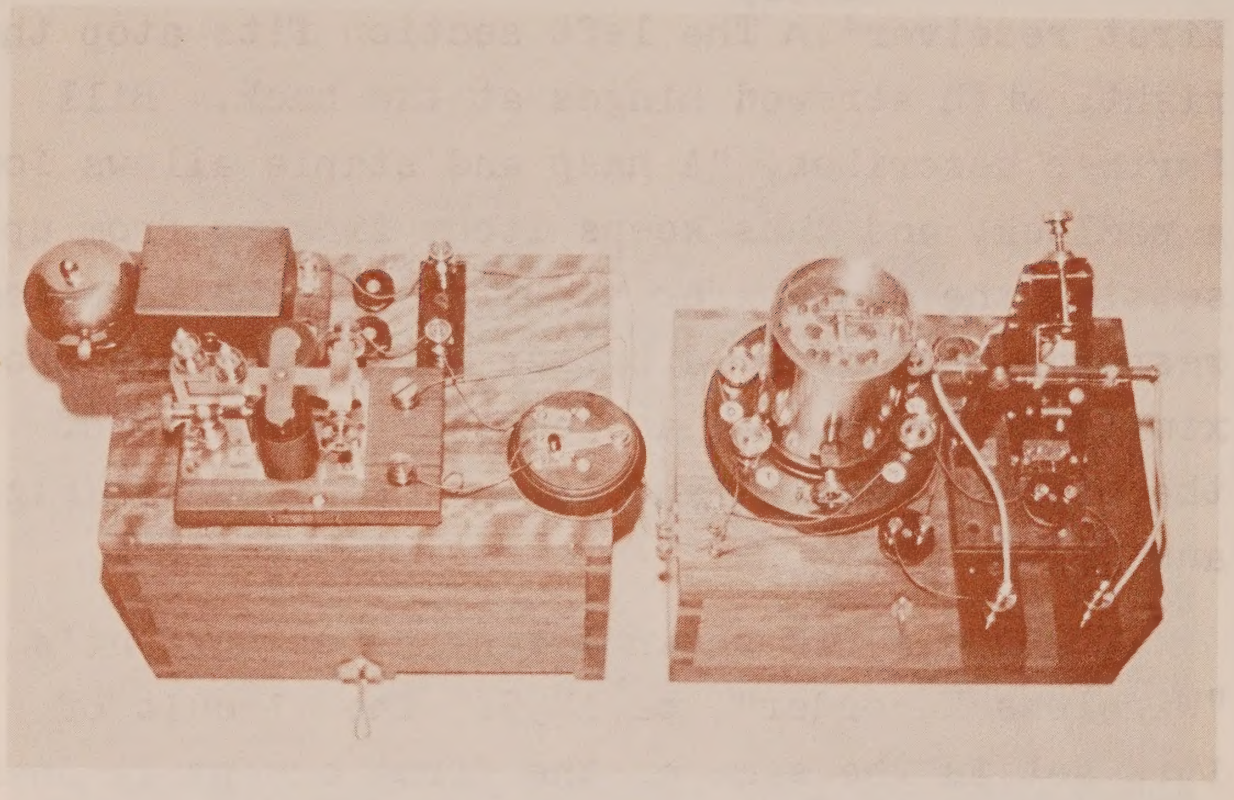


Photo #3 'Marconi's first receiver' (1896)
(replica)

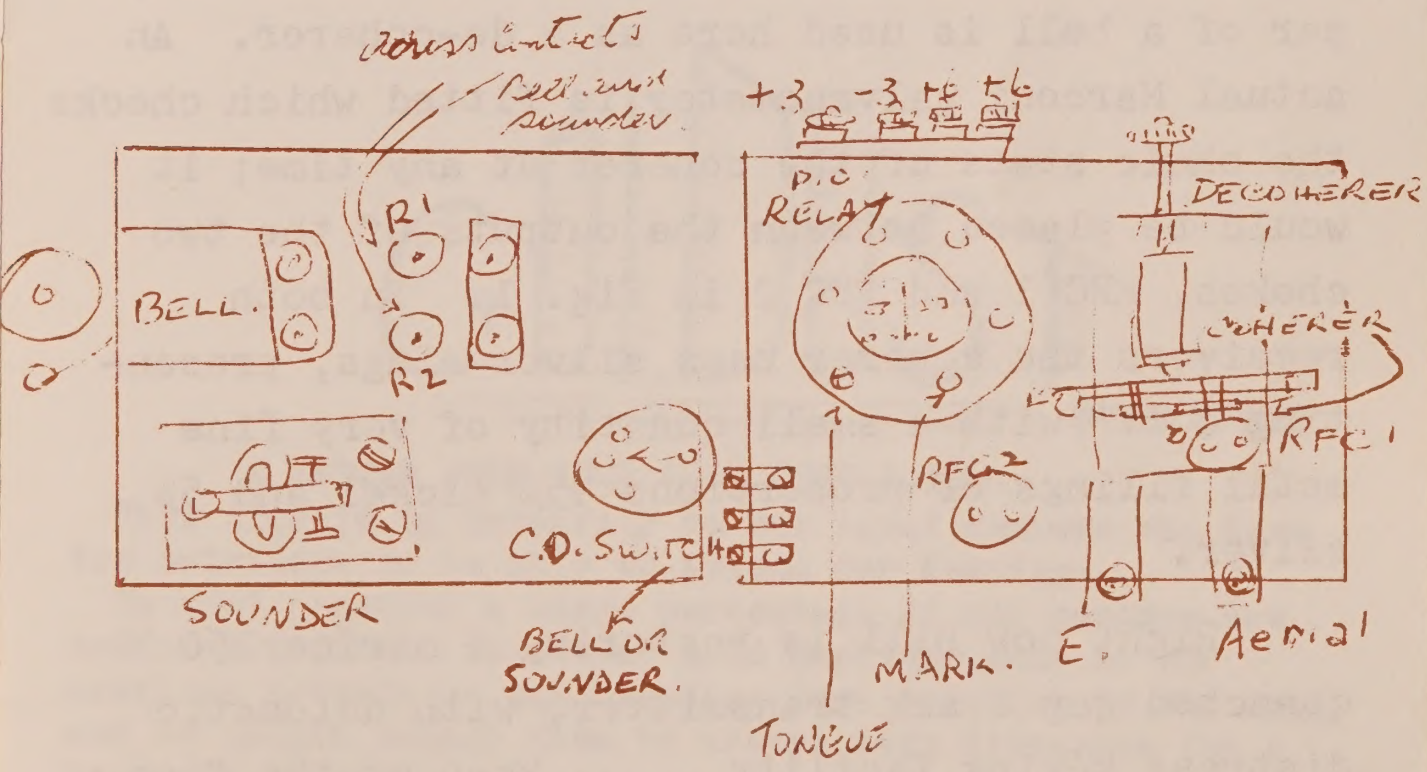


Fig.2 Layout

(1896)
first receiver'.^ The left section fits atop the right, with screwed hinges at the back. Bill further describes, "A hasp and staple allows for a padlock, and thus keeps itchy fingers from upsetting the de-coherer adjustment. The receiver responds readily to a buzzer keyed in close proximity to the aerial and earth." Sketches of the circuit details and layout are shown in Fig.1 and Fig.2.

In photo #4 is shown a replica of Marconi's "Wireless Recorder", of 1897. The circuit of this set is the same as the first except it does not have a selector switch for bell/sounder or a true de-coherer. This set uses a Morse inker (or direct writer) and uses ink to record the incoming Morse signals on paper tape. The clapper of a bell is used here as a de-coherer. An actual Marconi galvanometer is fitted which checks the ohmic state of the coherer at any time; it would be placed between the outputs of the two chokes, RFC 1 and RFC 2 in Fig. 1. In both receivers the coherer uses silver slugs, presenting a 'V' with a small quantity of very fine metal filings of proportions 95% nickel and 5% silver.

Right now Bill is restoring a marine 250 W quenched gap spark transmitter, with automatic distress keying facility ..... keep up the fine work Bill!

Now let's hear from some other collectors.

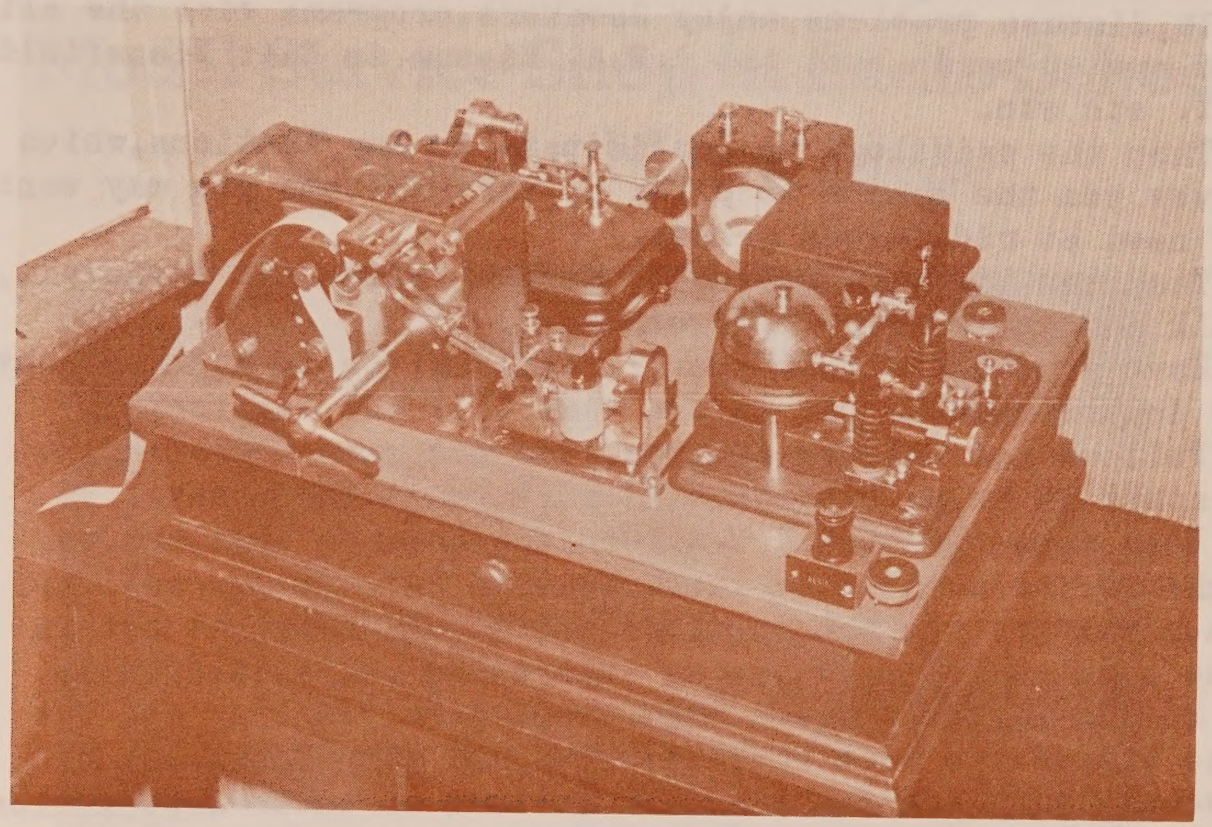


Photo #4 Marconi's "Wireless Recorder" 1897 (replica) - photo by VK4SS.

GOLDUST

By Sid PRIOR

A LETTER FROM YOUR GOLD DUST EDITOR

This missile is primarily to our local members who have the privilege to be able to attend our Meetings.

We must remember a large percentage of our members are not in a position to attend said Meetings,such as our American friends or our Canadian boys who live to far away, and we cannot expect them to travel such distances for a half day sojourn.

But as to our local members,do you realize,for your yearly dues,you not only get our issue of the"Cats Whisker" with all its interesting contents and the "Trading Post".

service,just the same as our members who live so far remote from our meeting place,but the privilege to meet,mingle, talk,discuss problems,enjoy Speakers,programs viz: the slide and spoken word about the A.W.A. Museum in East Bloomfield N.Y. etc.etc.

Then the privilege to participate in our Auctions,which gives you the chance to piick up various items you may want or need at ridiculous prices.

Then the happy half hour to have a coffee and donut,sit, talk and get to know each other.

Have you local members ever really given it much thought, or do you come to put in the time till the Auction?

Fellows and Gals.an Auction does not make a Meeting,but I admit it helps,but there is more to it than that.

Each aspect of the A.W.A. Conference,from speakers,to, exhibits,to a visit to the Museum,to hail fellow well met each year,to yes the Auctions and the Flea Market out in the parking lot,each has an interest we who attend enjoy.

So,you say,they are a big Association,yes they are but the bigger the more work involved,and they do it,why ?, because they are the proudest fellows of their Association.

So,maybe in the past I have delved to much on the A.W.A. and the members willingness to work, and my hat is off to them.

BUT you to each one of you,could make each and everyone of our meetings,so much more than they are,if you would give more of yourselves,and thinking to what a broad association we have from Coast to Coast,U.S.A.,CANADA, AUSTRALIA,NEW ZEALAND,FRANCE and ENGLAND.

We really should be very proud of our C.V.W.A. as we do get around.

Our C.N.E.Exhibition Booth takes the story of our Association,far and wide.through our visitors to our Booth.

What we have to do is,work think,volunteer,be 100% members and participate more in our various objectives viz: our meetings,our Exhibition Booth,our Stereo Show Exhibit,etc,etc, and be proud we are members of Canadas only "VINTAGE RADIO ASSOCIATION",after all we have a very unique hobby,so let us be fair with one another and give this letter some thought please ?.

What more can I say ?.

Sincerely yours

SID PRIOR.

****

RADIO COLLEGE OF CANADA -1928 to1978

A reprint from Radio Trade Builder March 1940 V.17,No3.

Model Service Shop in Radio School Contains Many Ideas

Here is an ideal layout for the moderate sized service business. It is built complete, as shown, inside a classroom at a Toronto radio school.

A NOTABLE advance in radio training technique was established a few months ago at Radio College of Canada, Toronto. This new development consists of a period of training in a model service shop as part of the regular Applied Radio and Electronics Course conducted by the College.

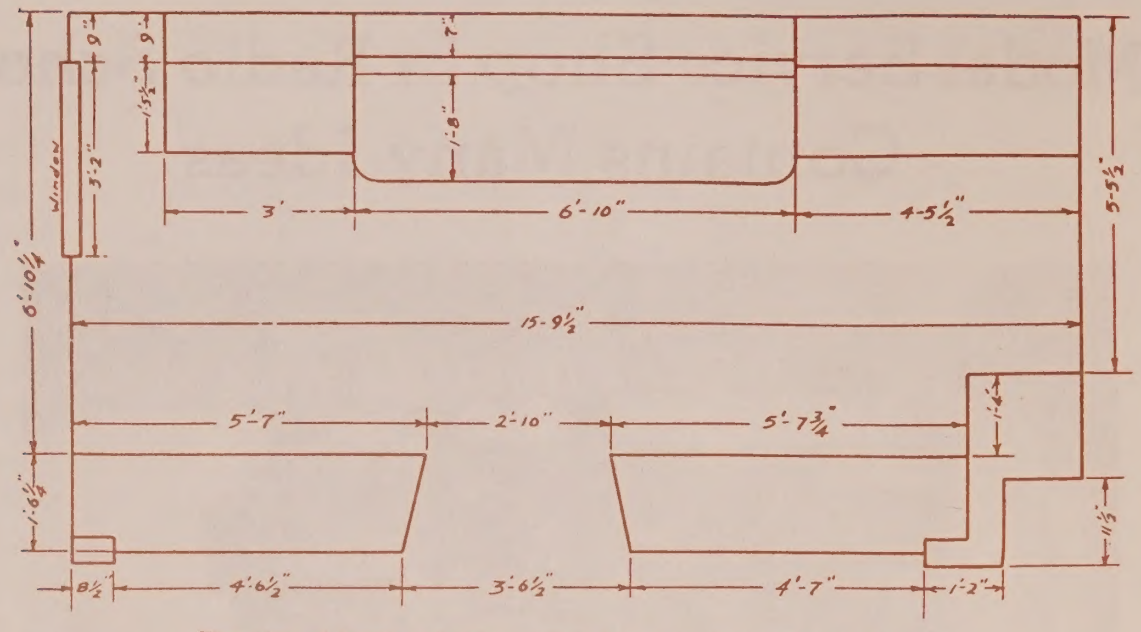
When Radio College took over its new school at 54 Bloor St. West, last July a complete model shop was built into one of the laboratories. Advanced students, in small groups, are assigned to operate the shop for several days. Receivers, upon which faults of various kinds have been placed, are taken into the shop, the students making the necessary analyses and repairs, and keeping all records, creating window displays, etc. These sets are of course taken from the large stock owned by the college; no work of any sort is done for outsiders.

This unique shop possesses many features that will, it is believed, be of considerable interest to radio men and for that reason it will be described in this article. The shop is complete in practically every detail. It has a standard store front of modern design with a centre door arrangement and a plate glass show window on either side. The interior is well arranged, particularly in view of the somewhat limited floor area available, and provides plenty of working space.

An exterior view is shown in Figure 1. The show windows are of plate glass each window measuring 4 ft. 11 in. by 4 ft. 7 in. plus the "wings". The door is of standard construction with hardware of modern styling. The exterior is finished i cream, except for the door which is in an attractive shade of green. The window mouldings are of aluminum. The awning is in a brick red.

The Service Bench

The service bench is in three sections. Receivers awaiting first tests may be examined in the first section at the left of the test panel. Sets undergoing preliminary or final tests are moved to the centre bench convenient to the test panel in which all necessary equipment has been assembled. After a set has been checked and the trouble located the re-



Plan view of bench and show window layout in the interior of the shop.

pair work if at all involved can be done on the bench to the right, on which most of the mechanical work is done.

The set can then be transferred again to the centre bench for the final test and adjustment.

Above the two end benches there are shelves for tubes, test equipment, parts and so on. Below these benches commodious cupboards with double doors and shelves hold the reserve stock of parts as well as additional instruments, display materials, literature, etc.

All benches, including the tops, were constructed of pine but in order to provide a smooth hard surface of good appearance the tops were covered with a black pressed wood board. This board is quite hard and is permanently colored black all the way through. It is easy to clean, does not show scratches readily and is hard enough to stand a reasonable amount of abuse.

The Test Panel

The test panel in the centre is seven feet long x 3 feet wide and is solidly constructed of pine covered with a sheet of the same type and color of pressed wood board as the bench tops. This panel slants slightly and is rigidly braced by means of wooden strips and end pieces. The construction is such that the panel is an individual unit separate from the benches or shelves so that it can be pulled out on the bench if it is necessary to remove instruments or do any work at the back.

The panel assembly is held firmly in

Showing the complete test panel and portable instruments inside the shop.

place by means of two slotted metal strips fastened to the tops of the adjacent shelves. These strips project over to the top of the panel and are fastened to it by means of wood screws. To remove the panel it is necessary only to loosen the screws after which the panel can be slid out on the bench.

The instruments were placed behind the panel, fitting up against the openings. The larger pieces of equipment are supported by small shelves fastened to the back of the panel.

In most cases all equipment operated from 110 volt lines is plugged into outlet boxes mounted on the wall behind the panel.

On the lower part of the panel there is one 60 cycle and two 25 cycle outlets. These outlets are connected to those on the wall behind the panel by means of BX cable with enough slack left to permit moving the test panel well out on the bench.

The 60 cycle, 110 volt, a-c is obtained from a remote-controlled motor-generator installed in another laboratory. This motor generator has a switchboard with relay, voltmeter, relay transformer, switches, pilot lights, etc. The relay, which has a 6 volt coil, is controlled by switches installed alongside the various 60 cycle outlets in the school; one of these switches is located at the left of the 60 cycle outlet in the service shop. When a relay switch is closed the relay closes the motor circuit. A pilot light indicates that the unit is running, ready for use.

The instruments are arranged to provide two complete test positions and include signal generators, volt-ohm-milliammeters, vacuum tube voltmeter, tube testers, set analyzers, a high voltage television tester, vibrator tester, oscilloscope, condenser bridge, resistance indicator, etc., as well as separate portable instruments and meters of various kinds.

A complete plan of the R.C.C. Model Service Shop appears in Figure 3. The dimensions were of course dictated by the available space in the laboratory and in an actual store might be considerably different .The general features, however, and the benches and test panel especially, will be of interest to many of our readers and may offer practical suggestions to those about to build or remodel their own shops.

The directors of the College state that the Model Shop is always open for inspection. They will be glad to welcome members of the trade at any time and to give them whatever information concerning the construction of the shop they may desire.

Every Serviceman Needs This Manual

● This Manual is being used by hundreds of Servicemen and Engineers. It contains over 700 circuit diagrams from 1927 to 1935. (1935-36 Circuits now being issued.)

This new manual has resistor and condenser values and I.F. frequency clearly marked. Complete circuit layouts with wiring. Complete tube complements and tube layouts. This information is bound in durable covers, a loose-leaf system providing for additional supplements that may be issued later. Yearly service will be provided by Radio College of Canada so you may keep your manual up-to-date. Indexed alphabetically by name of radio set manufacturers. Of inestimable value to every man in the radio field. Saves its cost time and time again.

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Write today for full information.

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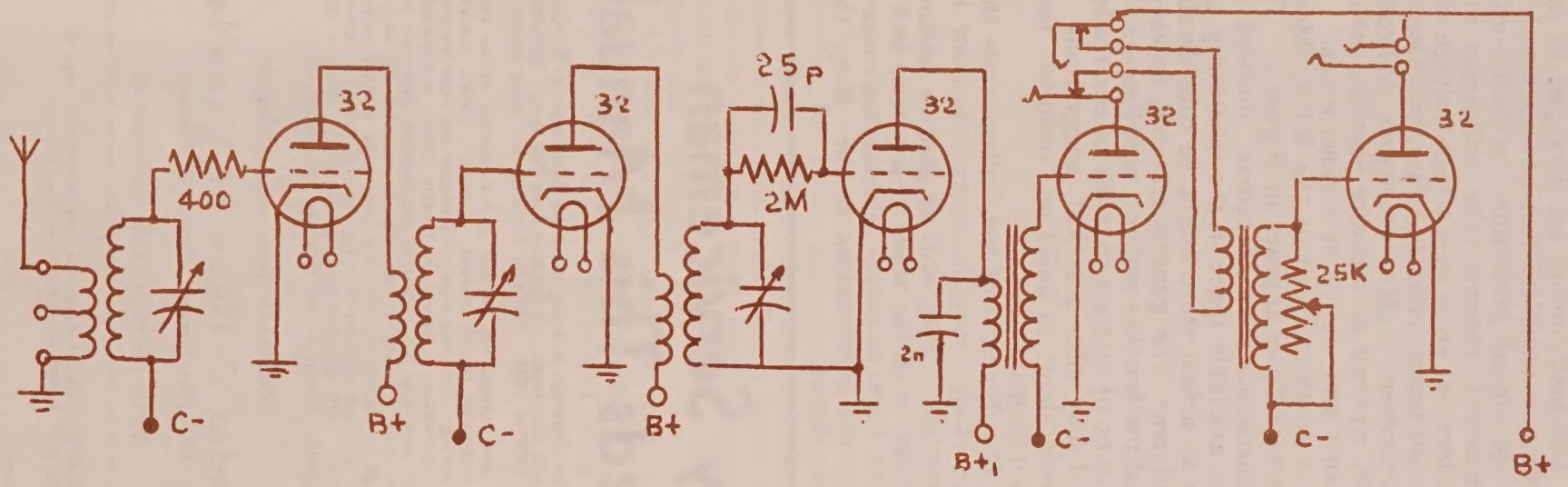
Send me without obligation full information regarding your complete technical service manual.

Name .....

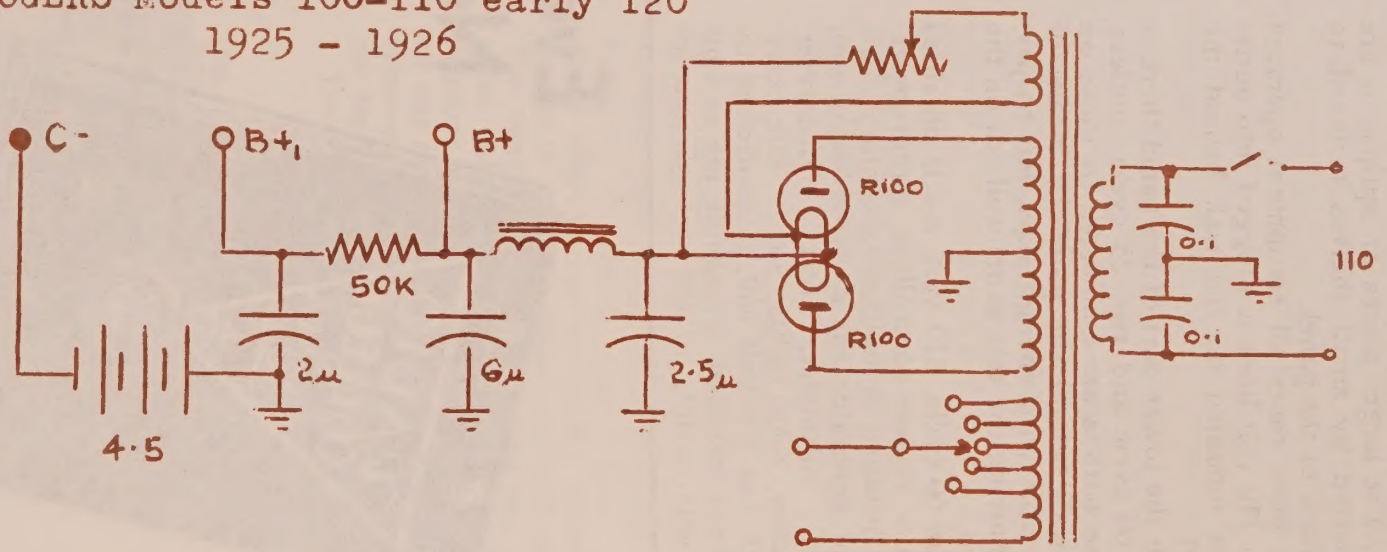
Address .....

City and Province .....

RTB-12



ROGERS Models 100-110 early 120
1925 - 1926



"TODAY'S SCHEMATIC"

redrawn by
M. Chaplin

The "205" Radio Receiver

By C. L. RICHARDSON, Radio Engineer*

THE story of the "205" Receiver is an outstanding one in the history of the radio activities of the Canadian General Electric Company. What renders it so, is that the "205" Receiver is 100% C.G.E. design and manufacture. Up to the present nearly all our Receivers have been of Radio Corporation design, modified in non-essentials and in some cases requiring the importation of certain parts of construction.

The theoretical design of the "205" began in the Fall of last year, when the Engineering Staff made a survey of all the prominent types of five tube receivers on the market. Circuit diagrams were studied and experiments made to determine the value of various features which seemed to have merit or were touted by the manufacturers.

The conditions to be met in a Receiver designed for popular use are totally different from what would be designed for radio engineers. It would be a much more simple matter to design and construct a receiver suitable for engineers, but (there is always a "but" somewhere) nobody else could operate it. So, a compromise has to be made electrically and mechanically; the former the more difficult.

There are three fundamental axioms that determine the sale of a radio receiver. These three occur in the mind of the prospective purchaser in the order named:—Design—Price—Operation. "Good Design" attracts the prospect, "Right Price" satisfies, and "Operation" is taken on faith and is usually under suspicion until proven.

Getting back to our story—The conditions to be met in this design were determined by the difficulties encountered in the Maritime and Western Provinces. In these districts all loop types of Receivers are at a disadvantage due to broadcasting stations being distant and the small pick-up possible on a loop. Also, there is keen competition from five or more types of tuned radio frequency receivers operating on outside antennas and employing the 201-A-5 volt tube (our own tubes, too!).

We, therefore, decided on the design of an antenna type five tube receiver, having a minimum of controls and fixed adjustments, a maximum in sensitivity, selectivity, stability and sufficient volume with quality. All this, of course, compatible with the three axioms, especially in regard to price.

Two models were next constructed and although satisfactory in sensitivity, selectivity and volume of output, they were abandoned as having too many controls, critical in operation and expensive in construction.

Production difficulties and lack of suitable laboratory apparatus put off the development for a time till late in February of this year, when more time was available, and our laboratory facilities had improved.

During the interval, however, new theoretical data was worked up and mechanical arrangements laid out.

Model 205.
Tuned Radio Frequency Receiver.

Three experimental panels of different electrical designs were built and tests carried out to check the data. After evolving a very satisfactory design it was found that there were possibilities of patent difficulties and it had to be abandoned.

To secure equal results or better and avoid the possible patent infringements, devolved upon the remaining panel. How well this work succeeded is proved by the design now known as the "205" which began to take its present shape about April. At a later date, I will write the story of our Radio Engineering Staff and their work. So much for the present.

In view of this being our initial effort at a 100% Canadian Product, we endeavored to put the best thought and material into its design and construction, and no pains have been spared to that end.

* Radio Engineer, Canadian General Electric Co.; Member of 1926 Membership Committee, Institute of Radio Engineers; Chairman, Toronto Section, Institute of Radio Engineers, 1925-6.

Features of Merit Construction

The cabinet and panel are of a new design in walnut with the new high lighting (or antique) effect in a satin finished lacquer. The cabinet possesses several unique features. The popular sloping style of panel has been retained and improved by means of a step projecting out from the vertical portion. This step provides support for the hand when tuning, while a groove will retain a pencil or card conveniently.

The three dials are observed through artistically framed windows, while the four control knobs harmonize with the walnut finish.

The top is not removable; access to the interior is by means of a door in the rear wall of the cabinet. By this means, the tubes are inserted into their sockets and any necessary adjustments made. If it is required to withdraw the panel mechanism from the cabinet, it is only necessary to remove four screws on the bottom of the cabinet. The cabinet is from designs submitted by Mr. Alan Taylor, a Toronto architect whose work in connection with the Georgian Room at the T. Eaton Co. needs no further comment.

The mechanism is supported on a metal chassis of iron strap and angle girder construction. The side frames are in one piece and electrically welded, while the cross pieces are bolted to the end frames.

The variable condensers are approximately straight line wave length type enclosed in dustproof celluloid covers with bakelite end pieces. There are two such condensers mounted in tandem and driven by one control. The support is a substantial platform bolted to one of the cross pieces and the panel cabinet.

The coils are of the latest in design, mounted on brass supports, also bolted to the same cross piece as the condenser. Brass is used in all metal parts in close proximity to the coil system so as to avoid serious losses, which would be the case with iron or steel.

The socket plate is of fabricated bakelite similar to that used in our 93 and 193 Receivers. The socket is well cushioned against causing microphonic disturbances in the tubes. All necessary adjustments are mounted on the socket plate so the mechanism need not be removed from the cabinet.

The transformers and terminal board are supported by one of the cross pieces that supports the socket plate. Another socket supporting cross piece carries the station rejector coil, and the antenna and ground terminals which project from the rear of the cabinet.

The interior wiring is of solid wire bound into a cable which lends neatness and removes the possibility of accidental damage were the wiring loose.

Connection to the batteries is by means of a cable braided to within ten inches of the battery end. The wires, of distinctive colors, projecting from the braid, have a new form of marker, that cannot slip off or scratch the hand or woodwork.

One of the most important features is the accessibility of every part of the receiver. Ample space is provided for the inspection and repair of every item of construction, a feature that should be appreciated by those who do the servicing work.

The Circuit

The electrical circuit consists of one stage of tuned radio frequency, regenerative detector and three stages of audio frequency amplification, the second audio stage being resistance coupled. It is to be noted that this form of circuit is the most popular one to-day, as can be seen by the amount of attention given it under various names, in all prominent radio publications.

Sensitivity

The sensitivity of the "205" may be stated as providing good loudspeaker reception on stations a thousand miles distant under normal atmospheric conditions. This range, of course, can be extended when using telephone receivers instead of the loudspeaker.

Selectivity

While the selectivity of a superheterodyne cannot be

(*Continued on page 16*)

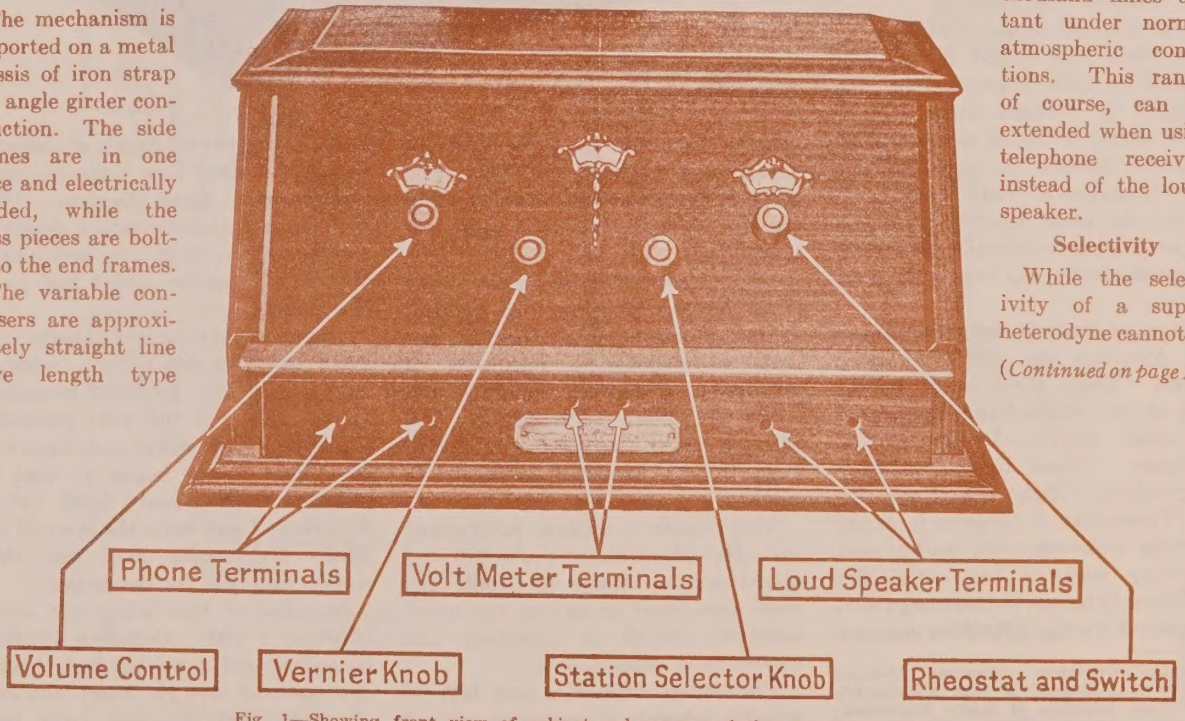


Fig. 1—Showing front view of cabinet and arrows pointing to controls, etc.

(Concluded from page 5)

TUBES	"A"	"B"	"C"
4-UX201A 1-UX171	1-6 VOLTS 80-100 AMPERE HOUR STORAGE BATTERY	2 OR 3 45 VOLT BLOCKS	FOR 9 VOLTS USE 2-4½ VOLT BLOCKS
			FOR 16½ VOLTS 4-4½ VOLT OR 1-22½ VOLT BLOCK WITH A 16½ VOLT TAP
4-UX199 1-UX120	6-1½ VOLT DRY CELLS OR 1-4 VOLTS STORAGE BATTERY		FOR 27 VOLTS USE 1-4½ AND 1-22½ VOLT BLOCK

C BIAS VOLTAGES FOR POWER TUBES		
TUBE	AT 90 VOLTS B	AT 135 VOLTS B
UX120	-9 VOLTS	-22½ VOLTS
UX171	-16·5 VOLTS	-27 VOLTS

BATTERIES	A		B		C		
TUBES	UX201A	UX199	UX201A	UX199	-9 VOLTS	-16½ AND -22½ VOLTS	-27 VOLTS
EVEREADY	WDR-120	6-2 VOLT CELLS	770	772	2-771	1-763	771 AND 763
BURGESS		6-"6"	10308	2308	2-2330	1-5156	1-2330 AND 1-5156
RELIABLE		6-"6"	1430V	130V	2-C18	1-215C	1-C18 AND 1-215C
EXIDE	14807	2-DF6	15293				
WILLARD	RWD-11	FW-110	HR-127				
WILLARD	RWD-11 POWER UNIT	4"-CTR	HR-129				

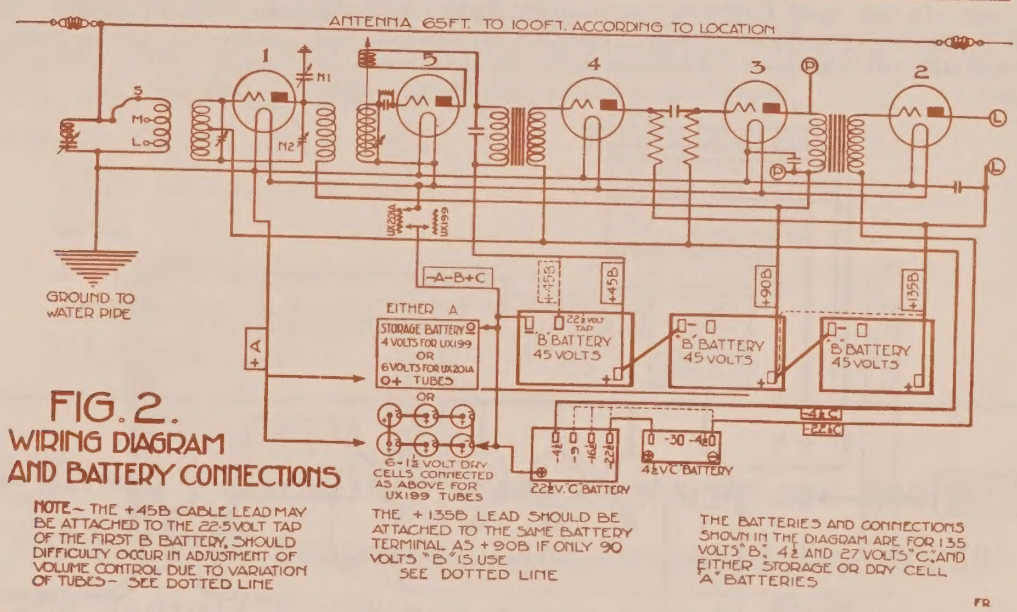


FIG. 2.
WIRING DIAGRAM AND BATTERY CONNECTIONS

NOTE—THE +45B CABLE LEAD MAY BE ATTACHED TO THE 22·5 VOLT TAP OF THE FIRST B BATTERY, SHOULD DIFFICULTY OCCUR IN ADJUSTMENT OF VOLUME CONTROL DUE TO VARIATION OF TUBES—SEE DOTTED LINE

THE +135B LEAD SHOULD BE ATTACHED TO THE SAME BATTERY TERMINAL AS +90B IF ONLY 90 VOLTS "B" IS USE SEE DOTTED LINE

THE BATTERIES AND CONNECTIONS SHOWN IN THE DIAGRAM ARE FOR 135 VOLTS "B", 4½ AND 27 VOLTS "C" AND EITHER STORAGE OR DRY CELL "A" BATTERIES

FR

expected with the "205" it will be found ample for all practical purposes.

An entirely new feature is the "Station rejector" included in the antenna circuit. The adjustment of this device is simple, and when tuned to an interfering station the signal is reduced to the volume of a distant one—(for instance, a Toronto station to that of Buffalo). This device increases the inherent selectivity of the receiver by about 50%.

Stability

Electrical stability of the radio frequency stage is obtained by means of the Rice system of amplification. The importance of this method lies in the possibility of obtaining maximum amplification equally over all wave lengths. With other systems there is a falling off of efficiency on the longer wave lengths due to the necessity of neutralizing at the low wave lengths.

The adjustments for neutralization in the "205" are simple and when once properly made, require no further attention, also no radiation will take place from the antenna.

When radio frequency circuits are tuned to a transmitting station signal there is a tendency for these circuits to oscillate. This condition is fundamental and increases as the efficiency of whole amplifier is improved. Care has to be taken to prevent inter-stage coupling and to suppress self-oscillation but not to the extent of lowering the efficiency.

Controls

Altogether there are only four controls. A "Mono" control in the form of a single knob is provided for tuning to stations. A "Fine" adjustment is secured by a vernier control, which is only used after the signal has been located. The remaining two knobs are for the battery switch, rheostat and volume control.

Flexibility

Flexibility in the antenna connections is provided by three taps for either "Long," "Medium" or "Short" antennas. The receiver will operate on an outside antenna of 60 to 150 feet according to location and signal strength obtainable. Indoor aerials are quite satisfactory in most localities.

Either the UX-199, 120 or the UX-201-A, 171 tube combinations may be used by merely changing the switch link on the socket plate. The use of power tubes UX-120 or UX-171 is strongly recommended. Very excellent results are obtained by using the new UX-200-A tube in the detector position.

Terminals are provided for either telephone receivers or loudspeaker, and for plugging in a voltmeter for reading filament voltage.

Volume

Due to the loud volume to be obtained in the last stage, the Radiola 100 Loudspeaker makes an ideal combination with the "205."

Even with full volume there will be found good quality, providing the volume control is not advanced too far. The resistance coupling in the audio amplifier is a factor in the elimination of distortion.

Tests

Elaborate precautions are being made in the Factory to ensure that adequate tests are applied before a receiver is shipped. There will be

nine major electrical tests and ten major mechanical inspections. Every item of construction will be carefully checked during assembly. Apparatus for measuring overall amplification and for determining neutralization is being installed. A specially built electrically shielded and soundproof room has been constructed through which every receiver will pass. In this room the receiver will be operated by a special broadcast transmitter and volume and quality judged.

Conclusion

Before this model was released for production, every possible test was made to determine reliability. A signal test made in Toronto, May 25, 26, and 27 succeeded in "tuning in" 50 stations on a Radiola loudspeaker. Jacksonville, Florida, was received on two consecutive nights including Omaha, Atlantic City, Memphis and DeMoines. The Receiver was next sent to Calgary and Winnipeg, where equally satisfactory results were reported. As a final check, another model similar to the first was sent to General Engineering Laboratory at Schenectady, which confirmed the work already accomplished.

The instruction book for the "205" also possesses several new features, such as complete diagrams of the receiver and battery connections, photos of various battery groups, aerials, calibration chart, station list and record.

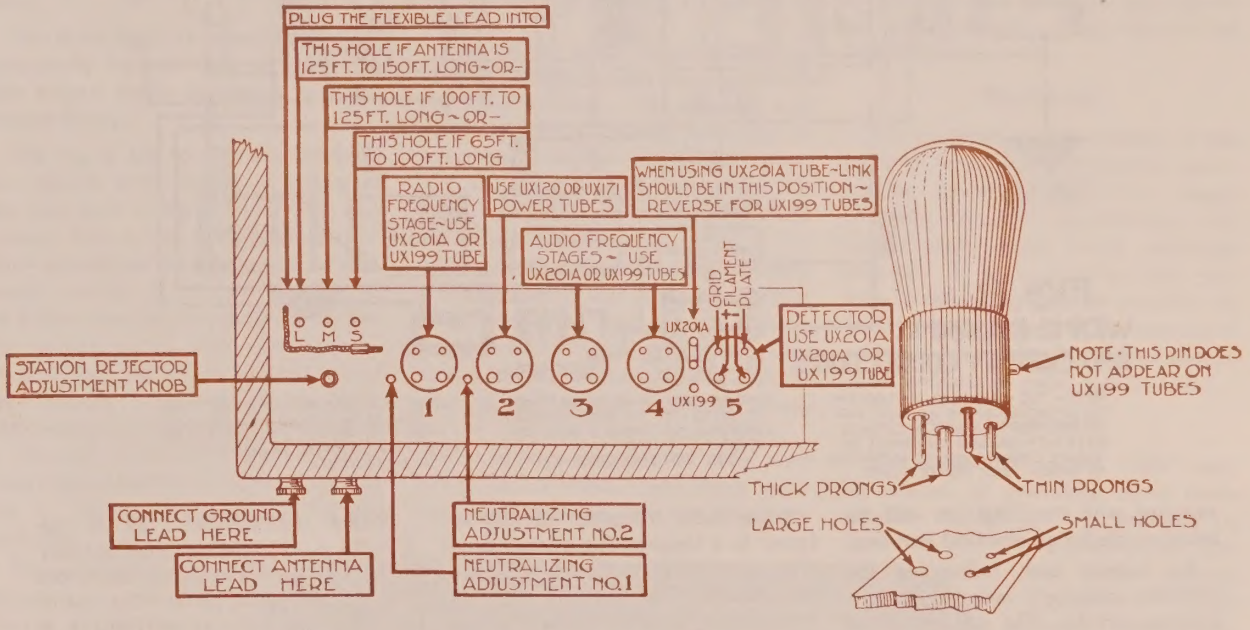

PLUG THE FLEXIBLE LEAD INTO
THIS HOLE IF ANTENNA IS 125 FT. TO 150 FT. LONG ~ OR ~
THIS HOLE IF 100 FT. TO 125 FT. LONG ~ OR ~
THIS HOLE IF 65 FT. TO 100 FT. LONG
RADIO FREQUENCY STAGE ~ USE UX201A OR UX199 TUBE
USE UX120 OR UX171 POWER TUBES
WHEN USING UX201A TUBE ~ LINK SHOULD BE IN THIS POSITION ~ REVERSE FOR UX199 TUBES
AUDIO FREQUENCY STAGES ~ USE UX201A OR UX199 TUBES
GRID
FILAMENT
PLATE
DETECTOR USE UX201A UX200A OR UX199 TUBE
L M S
STATION REJECTOR ADJUSTMENT KNOB
UX201A
UX199
1 2 3 4 5
NOTE · THIS PIN DOES NOT APPEAR ON UX199 TUBES
THICK PRONGS
THIN PRONGS
LARGE HOLES
SMALL HOLES
CONNECT GROUND LEAD HERE
CONNECT ANTENNA LEAD HERE
NEUTRALIZING ADJUSTMENT NO.2
NEUTRALIZING ADJUSTMENT NO.1

FIG. 3. SHOWING SOCKET PLATE AT REAR OF CABINET

FR.

Radiola Exhibit, Canadian National Exhibition, Toronto.

THE TRADING POST

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WANTED: Wiring Diagram for Grebe Synchrophase Mod MU1 Gordon Eklund 6518 Gunpowder Lane,Prospect,Ky. 40059

TRADE: RCA Radiola X cabinet & speaker for AK parts, Mod 20C,35 or Bbd. Want 3 WD-11 tubes,working preferred. John Huybregts, 591 Ingrid St., Fabreville - Laval, P.Q.

WANTED: Info, name&mod # of radio having tube complement: 14A7,14B6,14H7, 14Q7, 35A5 and 35Z3. P.J. Carroll, P.O. Box 5220, St. John's, Nfld. CANADA A1C 5W1

WANTED: Canadian Marconi Mod#220 or 219 ac radio chassis and speaker('47-'48); Radio Age or dated book from 1930 to '40's. J.D.MacDonald,R.R.#1, West Bay Rd., Glendale Nova Scotia B0E 3L0.

WANTED: Antenna -Radiola 28, Mod969, any AK mod for collection,Westinghouse type R.S. (pg.109 Vintage Radio); 199's(good). W. Beaton,79 meadowlands Dr.W., Ottawa K2G2R9

WANTED: Cabinet and binding post-Canadian Marconiphone II Richard Jehlik, General Delivery, Handel, Sask. S0K 1Y0

FOR SALE: Excellent reprints of Radiola 20 Instruction Booklet, 20 pages, $3.00 ppd..G. Eklund,6518 Gunpowder Lane, Prospect, Ky. US.A. 40059.

FOR SALE: Cab. for Brunswick Mod32 rad-recplyr; cab. for Westinghouse Mod57 special-or will buy works for either. Schematics ('26-'50) copied $3/radio-some with service info. George Found,26 Queenston Cresc,Kitchener,Ont. N2B 2V5

WANTED: Mercury Super10,Radio News of Can., Crosley Pup; can arrange pickup. A.R. Nolf, 7 Cambrian Way, Ewloe Clwyd, N. Wales CH5 3RE

WANTED: Radio News mags, some in '37-'38,'40-'45,'48; have traders, L.P. Rayner,5512 N71st Place, Scottsdale Arisona 85253 U.S.A.

FOR SALE: '25 Thompson Neutrodyne modV50-asking$100,xclnt, complete with Amplion horn; '26 King Mod81(Bridgeburg,Ont) battery set,complete but needs work, $50; AK Mod L horn w/o driver $25; unknown horn with Radiola driver $15; Westinghouse mod200 cone spkr cab. with unusual Crosley dynamic/magnetic cone spkr,works well,$20; '31 CGE Mod S-22-X ac radio,good cndn.,same ckt as RCA R-7 ,$75. R. Manning, 147 Elliott St., London,Ontario, CAN

FOR SALE: 6L6's, all you can use $2 each,bargain. C. Catalano, 93 Newlands Ave., Scarborough,Ont. CAN.

FOR SALE : Large list of tubes, test equipment , Northern Electric service manuals, technical books, some receivers e.g., 3x215A peanut tubes,Stark tube checker mod9-55; "Radio Servicing" Ghirardi, Hallicrafter rcvr Mod S40A. Send SASE for list to: V.E. Sharp, 2 Zina St., Orangeville Ont, CAN. L9W 1E1 (519) 941-4813.

WANTED: Schem; 4-tube Jefferson with #47,57,58,&12Z3 or 80; Dial lamp hood & metal dial strip for Radiola 18; Pattern or pic. of wood in spkr grill for DeForest-Crosley#700; Horn only with neck sliding into 3/4" hole; RCA UZ1325 horn parts;Cabinets for Airline 6, Philco96, Radiola 46, Musicone DC-5;Chassis, Radiola 21, G.E. #j-107;Mercury Superten power cable or plug; 7B7 tubes(2); Rola horn (horn only). Rod Goodwin,Box 1854,ponoka,Alta., CAN. ToC 2HO.

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562 Mr. John S. MacKay
P.O. Box 46345, Station "G"
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